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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,183	08/23/2001	Takeshi Gotoh	1612.65773	1618

7590 10/29/2003

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EXAMINER

SEFER, AHMED N

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 10/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/938,183

Applicant(s)

GOTOH ET AL.

Examiner

A. Sefer

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 1-21, 23 and 25-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22, 24 and 34-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of third embodiment (claims 22-24) is acknowledged. However, claim 23 (indirectly depends on claim 16) has been withdrawn.

Claim Objections

2. Applicant is advised that should claim 36 be found allowable, claim 37 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 36 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation "said another low-refractive-index layer is unitary with said low-refractive-index layer" is not disclosed in the specification to enable one skilled in the art to make and/or use the invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

c) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. Claims 22, 24, 34, 35 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Umemoto et al. US PG-Pub 2001/0012158.

Umemoto et al disclose (see figs. 1 and 2 and par. 0090) a reflective liquid-crystal display, comprising: a lighting apparatus, comprising a light guiding plate 13 including a flat first surface having a plurality of projections, each said projection being formed with a first inclined plane A1 having a first angle between said plane and said flat first surface and with a second inclined plane A2 formed adjacent to said first inclined plane with a second angle between said plane and said flat first surface, said second angle being larger than first angle; and a light source 5 disposed on a side surface of said light guiding plate; a reflective liquid-crystal panel disposed on a second surface of said light guiding plate, said second surface opposing said first surface, said reflective liquid-crystal panel opposing said first surface; a polarizer 31 disposed between said reflective liquid-crystal panel and said light guiding plate; and a low-refractive-index layer 11 or resin (as in claim 24) with a refractive index within the recited range (as in claim 34)

formed between said polarizer and said light guiding plate, said low-refractive-index layer having a refractive index smaller than a refractive index of said light guiding plate.

As for claim 35, Umemoto et al disclose (see pars. 0056-0057, 0084-0085) another low-refractive-index layer 15 (could be formed from silicon dioxide) covering said plurality of projections, and having a refractive index smaller than that of the light guiding plate (with a refractive index higher than said low-refractive-index layer 11).

As for claim 38, Umemoto et al disclose an adhesive agent 12 disposed between a low-refractive-index layer and said polarizer.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 22, 24 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al. USPN 6,340,999 in view of Kobayashi US PG-Pub 2001/0017678.

Masuda et al disclose in fig. 10 a reflective liquid-crystal display, comprising: a lighting apparatus, comprising a light guiding plate 3 including a flat first surface having a plurality of projections, each said projection being formed with a first inclined plane 3d having a first angle between said plane and said flat first surface and with a second inclined plane 3e formed adjacent to said first inclined plane with a second angle between said plane and said flat first surface and a light source 2 disposed on a side surface of said light guiding plate; a reflective liquid-crystal

panel disposed on a second surface of said light guiding plate, said second surface opposing said first surface, said reflective liquid-crystal panel opposing said first surface; a polarizer 4 disposed between said reflective liquid-crystal panel and said light guiding plate; and a low-refractive-index layer 10a or resin (as in claim 24) with a refractive index within the recited range (as in claim 34) formed between said polarizer and said light guiding plate, said low-refractive-index layer having a refractive index smaller than a refractive index of said light guiding plate, but do not specifically disclose said second angle being larger than first angle.

Kobayashi discloses in fig. 3 a reflective liquid-crystal display, comprising a light guiding plate 28 including a flat first surface having a plurality of projections, each said projection being formed with a first inclined plane 33 having a first angle between said plane and said flat first surface and with a second inclined plane 34 formed adjacent to said first inclined plane with a second angle between said plane, said second angle being larger than first angle.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Kobayashi's teachings with the device of Masuda et al since that would prevent generation stripe-like diffraction images as taught by Kobayashi.

9. Claims 22, 24 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al. USPN 6,340,999 in view of Watanabe (JP 8-220345).

Masuda et al disclose in fig. 10 a reflective liquid-crystal display, comprising: a lighting apparatus, comprising a light guiding plate 3 including a flat first surface having a plurality of projections, each said projection being formed with a first inclined plane 3d having a first angle between said plane and said flat first surface and with a second inclined plane 3e formed adjacent to said first inclined plane with a second angle between said plane and said flat first surface and a

light source 2 disposed on a side surface of said light guiding plate; a reflective liquid-crystal panel disposed on a second surface of said light guiding plate, said second surface opposing said first surface, said reflective liquid-crystal panel opposing said first surface; a polarizer 4 disposed between said reflective liquid-crystal panel and said light guiding plate; and a low-refractive-index layer 10a or resin (as in claim 24) with a refractive index within the recited range (as in claim 34) formed between said polarizer and said light guiding plate, said low-refractive-index layer having a refractive index smaller than a refractive index of said light guiding plate, but do not specifically disclose said second angle being larger than first angle.

Watanabe discloses in fig. 2 a reflective liquid-crystal display, comprising a light guiding plate 22 including a flat first surface having a plurality of projections, each said projection being formed with a first inclined plane 3a having a first angle between said plane and said flat first surface and with a second inclined plane 3b formed adjacent to said first inclined plane with a second angle between said plane, said second angle being larger than first angle.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Watanabe's teachings with the device of Masuda et al since that would prevent dispersion in luminosity as taught by Watanabe.

10. Claims 36 and 37, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Umemoto et al. in view of Obata (JP 5-297366).

Umemoto et al disclose the device structure as recited in the claim, but do not disclose a unitary low-refractive index layer.

Obata discloses a reflective liquid-crystal display, comprising a light guiding plate 11; and a unitary low-refractive index layer 21-23.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Obata's teachings with the device of Umemoto et al since that would enhance brightness as taught by Obata.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (703) 605-1227.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601.

ANS
October 15, 2003

SUPERVISOR
TELEPHONE
